

## **REMARKS**

### **I. Status of Claims**

Prior to entry of the present Amendment, claims 1-2, 4-9 and 11-18 were pending in the application. The Office Action Summary of the Action dated June 26, 2008 incorrectly indicates that claims 1-18 are pending in the application. The Office Action Summary further indicates that claims 1-9 and 11-18 are rejected and that claim 10 is withdrawn from consideration. However claims 1-2, 4-9 and 11-18 were pending in the application and claims 3 and 10 had been canceled. Applicants respectfully request clarification of this matter for the record.

Presently, claim 1 is amended herein to recite that the photochemically refractive-index-changing polymer has a number-average molecular weight of 20,000 or higher and a stereoregularity of 70% or higher in terms of syndiotacticity (rr). Claim 4 is canceled. Support for the amendment can be found, for example, at page 27, lines 14-21, and original claim 4. No new matter is presented.

### **II. Information Disclosure Statement**

The Examiner has returned an electronically signed copy of the PTO/SB/08 Forms submitted with the Information Disclosure Statements (IDS) filed on April 3, 2006 and November 29, 2006. Three Japanese references are crossed off on the PTO/SB/08 Form submitted with the IDS filed April 3, 2006 allegedly because they were not in English.

Applicants note that it is not required for documents cited in an IDS to be in English. The requirement is for a concise explanation of the relevance, as it is presently understood by the individual designated in 37 C.F.R. §1.56(c) most knowledgeable about the content of the information listed that is not in the English language.

In this case, the references crossed off by the Examiner were submitted with the International Search Report for the PCT application, No. PCT/JP04/014874 dated December 28, 2004, which indicates the degree of relevance for JP 01-13139, which corresponds to JP 64-13139 listed on the PTO/SB/08 Form. Thus, the International Search Report provides an indication of the degree of relevance of the listed references as found by the International Bureau in compliance with the concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents as indicated at page 2 of the IDS filed April 3, 2006. This is an accepted practice as indicated by MPEP §609.04(a)(III), which states, “where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office.”

It is also explained in the Information Disclosure Statement transmittal letter submitted on April 3, 2006, that Japanese Patent Application Nos. 7-92313 and 9-178901 are cited and discussed on page 3 of the specification of the present application, which is in compliance with the requirement for a concise explanation requirement under 37 C.F.R. § 1.98(a)(3) for foreign language documents. This is also an accepted practice as indicated by MPEP §609.04(a)(III), which states: “the concise explanation may be either separate from the specification or part of the specification. If the concise explanation is part of the specification, the IDS listing should include the page(s) or line(s) numbers where the concise explanation is located in the specification.”

In view of the above, the IDS filed April 3, 2006 is in compliance with 37 C.F.R. §§1.97 and 1.98 and the three Japanese references crossed off on the PTO/SB/08 Form submitted

therewith should have been considered by the Examiner. Accordingly, **Applicants respectfully request the Examiner to return an initialed copy of the PTO/SB/08 Form submitted with the IDS filed April 3, 2006, indicating that the references have been considered and made of record.** A copy of the PTO/SB/08 Form submitted with the IDS filed April 3, 2006 is attached for the Examiner's convenience.

### **III. Response to Claim Rejections under 35 U.S.C. § 102**

#### **A. JP '139**

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated Nobuyuki and Mitsuru (JP 64-013139) (hereinafter JP '139).

The English Abstract of JP '139 discloses a linear high-molecular polymer including allyl(meth)acrylate, and the Examiner appears to consider that this polymer corresponds to a photochemically refractive-index-changing polymer of the present invention (in claim 1).

Based upon the English Abstract of JP '139, the polymer taught by JP '139 is not a homopolymer within the scope of formula (I) of claim 1. It appears that the Examiner considers JP '139 as teaching a compound selected from allyl(meth)acrylate or (meth)acrylic acid, whereas according to the English language Abstract, JP '139 teaches a polymer selected from the copolymer of allyl(meth)acrylate/(meth) acrylic acid or a copolymer of allyl(meth)acrylate/(meth) acrylic acid and other addition polymerizable vinyl monomers.

Further, claim 1 is amended herein to recite that the photochemically refractive-index-changing polymer has a stereoregularity of 70% or higher in terms of syndiotacticity (rr). JP '139 does not disclose, teach or suggest this feature of the present invention.

The specification of JP '139 discloses that the copolymers such as those disclosed in JP-A-59-46643 and JP-A-62-6253 may be mentioned as a linear high-molecular polymer which is used in the present invention" (page 7, right column). According to the disclosure of JP-A-59-46643 and JP-A-62-6253, the linear high-molecular polymer including allyl(meth)acrylate is obtained by (1) the addition polymerization of (meth)acrylic polymer with the compound having allyl group or (2) radical polymerization of monomer mixture including allyl(meth)acrylate in the solvent. Therefore, JP-A-59-46643, JP-A-62-6253 and JP '139 do not disclose a polymer having stereoregularity as recited in amended claim 1. Additionally, the preparation methods in these references do not have special operations, and a polymer having high stereoregularity cannot be obtained by these methods. Namely, the polymer of JP '139 does not inherently possess the property of "high stereoregularity".

Further, the English Abstract of JP '139 is silent with respect to the element of an increase in refractive-index upon irradiation.

Moreover, the Examiner has not provided a reasonable technical basis for asserting that the other claimed properties are inherent. Inherency cannot be established by probabilities and possibilities that a certain property or characteristic might be achieved if certain conditions are optimized. Thus, the Examiner's assertion that *if* the same composition is cured under identical conditions the resulting properties would be inherent is legally improper as there is insufficient information regarding curing conditions of the polymer of JP '139 based on the English Abstract.

Accordingly, claim 1 is not anticipated by or rendered obvious over JP '139.

Withdrawal of the rejection is respectfully requested.

**B. Andrews (U.S. Patent No. 4,293,674)**

Claims 1-6 are rejected under 35 U.S.C. § 102(b) as being anticipated by Andrews (U. S. Patent No. 4,293,674).

Andrews teaches a compound of the following formula:  $\text{CH}_2=\text{C}(\text{CH}_3)\text{CO}_2\text{R}$  wherein R is an alkadienyl or cycloalkadienyl group which contains the 1,3- or 1,4-diene carbon skeleton,  $\text{C}=\text{C}-\text{C}=\text{C}$  or  $\text{C}=\text{C}-\text{C}-\text{C}=\text{C}$ , respectively, homopolymers and copolymers of the compound, and curable finishes containing the homopolymer and/or copolymer. See Abstract and column 1, lines 53-54.

Claim 1 is amended herein to recite that the photochemically refractive-index-changing polymer has a number-average molecular weight of 20,000 or higher. Andrews does not disclose, teach or suggest this feature of the present invention. The polymerization method of Andrews is different from that of the present invention and, therefore, the number-average molecular weight of the polymer of Andrews is different from that of the present invention as recited in amended claim 1. For example, Examples 1 to 3 in the present specification show the polymer having a number-average molecular weight of 35,900-77,000. On the other hand, as can be seen from the examples in Table 2 of Andrews, the number-average molecular weight of the polymers is 7,500 to 16,000. For at least this reason, claim 1 is not anticipated by Andrews.

Additionally, Andrews discloses polymers for curable films having good hardness and gloss. Andrews does not describe crosslinking of the polymers. Further, Andrews does not suggest the use of polymers of a molecular weight of 20,000 or higher. Thus, the subject matter of amended claim 1 is also unobvious over Andrews.

Accordingly Applicants respectfully request withdrawal of the rejection based on Andrews.

**C. Yanagase et al (U.S. Patent No. 6,160,070)**

Claims 17 and 18 are rejected under 35 U.S.C. § 102(b) as being anticipated by Yanagase et al (U. S. Patent No. 6,160,070).

Applicants traverse the rejection.

The Examiner points out that Yanagase teaches a process for the preparation of a poly-(meth)acrylate ester of formula (V):<sup>1</sup>  $\text{CH}_2=\text{C}(\text{R}^{15})(\text{CO}_2\text{R}^{16})$ , wherein  $\text{R}^{15}$  represents a hydrogen or a methyl group and  $\text{R}^{16}$  represents a monovalent group selected from the group consisting of aliphatic hydrocarbon groups, aromatic hydrocarbon groups and hydrocarbon groups containing a functional group such as an ether bond or an amino group. Column 5, lines 37-46. The Examiner notes that ethyl methacrylate and allyl methacrylate are specific examples. Polymerization is carried out using an organometallic compound having at least one polymerization initiating site. Specific examples are disclosed at column 5, lines 10-30.  $(\text{C}_5\text{Me}_5)_2\text{SmMe}(\text{thf})$  is employed in the working examples.

However, there is no specific working example which employs an acrylic vinyl monomer within the scope of formula (1) recited in the present claims. Vinyl methacrylate and vinyl acrylate are disclosed as specific examples in Yanagase at column 5, line 53 and 61, but one would have to pick and choose amongst the various methacrylate esters disclosed to arrive at the

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<sup>1</sup> The Examiner incorrectly refers to formula (vi).

present invention and such picking and choosing is not permissible in a §102 anticipation rejection. For at least this reason the present invention is not anticipated by Yanagase.

Accordingly, Applicants respectfully request withdrawal of the §102 anticipation rejection.

### **III. Claim Rejections under 35 U.S.C. § 103**

In paragraph 14 of the Office Action, claims 7-9 and 11-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Andrews as applied to claims 1-6 above, and further in view of Yeshin (U. S. Patent No. 3,615,448).

The Examiner relies on Andrews as discussed above. The Examiner recognizes that Andrews does not teach the addition of a photoinitiator, sensitizer or a chain transfer agent or the method of curing via UV radiation. To remedy this deficiency, the Examiner relies on Yeshin as teaching a photocurable composition containing finely divided particles of vinyl plastic. The Examiner further asserts that the composition of the combination of Andrews and Yeshin would inherently possess the claimed properties.

Applicants respectfully traverse the rejection on the basis that the Examiner has not made a *prima facie* showing of obviousness as there is no apparent reason to combine the references. As stated above, the polymer of Andrews is taught to cure rapidly in air to give hard, clear glossy films. Andrews is silent regarding an increase in refractive-index upon irradiation. On the other hand Yeshin is directed to a photocurable composition for a lithographic printing plate and Yeshin is also silent regarding an increased refractive index upon irradiation. Thus, one of ordinary skill in the art would consider that combining the references as suggested by the Examiner would render the composition unsuitable for its intended purpose and would not be

expected to yield desirable results with respect to increasing the refractive index. Also, the Examiner has not set forth a reasonable technical basis for asserting the claimed properties would be inherent.

Accordingly, the present invention is not rendered obvious by the cited references, whether taken alone or in combination.

Withdrawal of the obviousness rejection is respectfully requested.

#### **IV. Conclusion**

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


SUGHRUE MION, PLLC  
Telephone: (202) 293-7060  
Facsimile: (202) 293-7860

WASHINGTON DC SUGHRUE/265550

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CUSTOMER NUMBER

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Jennifer M. Hayes  
Registration No. 40,641